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ABSTRACT

Comparison of a variety of vision screening methods used with preschool children led to modification of the standard Snellen E test called the Blackbird Vision Screening System. An instructional story using an "E-bird" was developed to teach children the various possible positions of the E. The visual confusion caused by the chart was eliminated by printing single symbols on 9X9 test cards. Other adaptations included designing disposable cardboard eyeglasses with flip-out lenses to serve as an occluder for one eye and the development of the Blackbird Storybook Home Eye Test to help identify vision problems, especially amblyopia, in children not in a preschool program providing vision screening. With the new test 99% of children ages 3 to 5 are able to be screened. A brochure describing and illustrating the screening test materials is attached. (DB)

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PRESENTATION FOR 116TH ANNUAL MEETING:

Tuesday, November 15, 1988
479 2:00 PM - 3/30 PM
Marriott Copley Place
Boston, MA
VISION CARE SECTION: Dr. Michael T. Cron

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THE EVOLUTION OF THE SNELLEN E TO THE BLACKBIRD

(Blackbird Preschool Vision Screening Program)

How do we vision screen children who do not talk, read or speak English? Tools to identify acuity problems in young children are grossly inadequate. The standard Snellen E chart was devised in 1862 for use with older, non-literate children and adults. For lack of a better method, we are forcing little children to respond to the "E" when they do not have the visual-motor-perceptual capabilities to do so. The "E" is non-relevant and abstract for preschoolers.

"Then why don't we wait until school-age to test their

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eyes?" one argues. With amblyopia (lazy-eye), it is critical that the condition be identified by four or five years of age in order to prevent unilateral blindness, which is a totally unnecessary and preventable medical condition. Yet hundreds of thousands of children across the country develop irreversible blindness because we are not adequately screening them.

This led me on a nationwide search for an effective vision screening tool. Each method which seemed to offer preschool capabilities was tested in the field. Questions posed were: Does it hold the child's attention? Are the testing symbols relevant to the child's experiences? Does it require tedious instructions and tasks? Is it fun? Does it encourage active participation? Does it require verbal responses? Does it require reading skills? How does it relate to other cultures and languages? In other words, is the test adapted to the needs and characteristics of preschool-aged children?

The seemingly simple picture chart requires verbal responses and vocabulary. The hands of the Sjogren chart has a "confusing" number of fingers to a young child. To the tester, it is difficult to get clear-cut positions from the child. The matching letter tests do not hold the child's attention. The "E" requires too much time spent in teaching the positions of the "three-legged table". Each method has its drawbacks and the resulting screening rates are far from satisfactory. It is understandable that medical

professionals often recommend that vision testing be delayed until school-age.

"We just limp along with what we have", said a veteran school nurse.

The search ended with nothing better than the standard Snellen E. My focus was then changed to adapting the "E" to preschool children, to make the "E" a more meaningful symbol to little children.

Not all children know an umbrella (Allen Picture chart) or a sailboat (Kindergarten chart), but all children are familiar with a bird. By designing an E-bird and writing an instructional story, almost all preschool children were able to be screened. Children learned flight positions while weaving in and out of minor catastrophes listening to the story of an adventuresome bird.

The visual confusion caused by the chart was eliminated by printing single symbols on 9x9 test cards.

The standard 20-feet testing distance was retained. The inevitable body movements in young children, particularly the leaning forward, were not as critical at 20 feet as it was at 10 feet.

There was yet another problem to be solved. Young children could not properly hold an occluder over one eye. Although these occluders should be disposed of after each use, many professionals were using plastic hand-held occluders. Paper cups, pirate patches, eyeglass frames with a cover over one side were other types of occluders commonly used. 3x5 cards were the most frequently used but these often

caused pressure blindness and peeking from improper holding. These problems were solved by designing disposable cardboard eyeglasses with flip-out lenses. These eyeglasses also allowed nurses working alone to do the testing without the worry of having to find someone to hold an occluder for the child. An added bonus was that hesitant children were encouraged by others happily returning to the classroom with a pair of glasses to take home. To the busy nurse, the eyeglasses with the inscription: I JUST HAD MY EYES CHECKED served to notify parents that screening had been done.

There were requests from nurses to demonstrate the BLACKBIRD method with its phenomenal vision screening rate. Representatives from the California State Department of Education and the Department of Health suggested that the BLACKBIRD be copyrighted and made available for others to use.

The late Dr. Gerald Portney, Chief of Ophthalmology, University of California Medical Center Davis, gave invaluable input. "This is a great service to mankind", he said, "Get moving on it".

The BLACKBIRD is rapidly replacing the Snellen E in Head Start programs across the country. Clinics, offices, special education classes, health departments, preschools and elementary schools are finding that vision screening of young children is no longer a tedious task. "I want to do it again", or "You forgot to do me" are frequent small-fry comments.

As one set of problems were being solved, others arose.

While there were comments such as: "You must have a super sharp nurse to catch this in your child", other parents were told: "Return in one year" or "Immature" or "Bring him/her back when able to read". This alerted me to the needs of parents whose children were not enrolled in a preschool program such as ours where vision screening was done. The vision of only a small percentage of children in our country of wealth was being checked by the age of four. Through the years, the National Society to Prevent Blindness had conducted educational campaigns for the detection of amblyopia but because their screening tool was not geared for preschool-aged children, the problem of undetected amblyopia continued.

The BLACKBIRD STORYBOOK HOME EYE TEST was designed for use by non-medical persons, such as parents and teachers. While listening to the story of a bird pretending to be an owl and bumps into trees or nearly drowns as a seagull, children learn the four flight positions. Parents follow the simple step-by-step instructions which help them to assess whether their children do or do not have acuity problems. Often doctors' offices send the STORYBOOK home to prepare children for the vision test. This relieves the professional staff from instruction time.

The Blackbird Vision Screening System was awarded a $2000 honorarium from the Foundation for Excellence in Nursing for the most innovative idea in 1984. It is also recommended by the California State Department of Education

for vision screning non-verbal, non-literate and/or non-English speaking children.

With the evolution of the "E" to the BLACKBIRD, a universally understood preschool language, 99% of children ages three to five years of age are able to be screened. There is now no excuse for a child to lose sight of an eye because we failed to identify early amblyopia.

Aptly stated by a television commentator: "The Snellen E is now obsolete". Hopefully, at the same time, amblyopic blindness in children will also become obsolete.